



**NRC Bulletin 2003-02  
10 CFR 50.54(f)**

Palo Verde Nuclear  
Generating Station

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102-05033-CDM/SAB/RJR  
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U.S. Nuclear Regulatory Commission  
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Rockville, MD 20852

Reference: APS letter 102-05000-CDM/SAB/RJR, "APS' 30-Day Response to the Information Requested by NRC Bulletin 2003-02," dated September 19, 2003.

Dear Sirs:

**Subject: Palo Verde Nuclear Generating Station (PVNGS)  
Unit 2  
Docket No. STN 50-529  
APS' 60-Day Letter in Response to NRC Bulletin 2003-02  
Commitment No. 2**

In the letter referenced above, Arizona Public Service Company (APS) made the following commitment.

If APS is unable to perform a bare-metal visual examination of each penetration, APS will provide the information requested in Bulletin 2003-02, Item 1(c), within 60 days of determining that the examination could not be performed.

NRC Bulletin 2003-02, Item 1(c) requested the following information.

(c) If you are unable to perform a bare-metal visual inspection of each penetration during the next refueling outage because of the inability to perform the necessary planning, engineering, procurement of materials, and implementation, are you planning to perform bare-metal visual inspections during subsequent refueling outages? If so, provide a description of the actions that are planned to enable a bare-metal visual inspection of each penetration during subsequent refueling outages. Also, provide a description of any penetration inspections you plan to perform during the next refueling outage. The description should address the applicable items in paragraph (b).

APS performed an as-found visual examination of all 61 bottom mounted nozzles at PVNGS Unit 2 during the 11<sup>th</sup> refueling outage. The as-found examination of all 61 penetrations (360° around each reactor vessel bottom head nozzle interface) was performed by an APS Level III VT-2 qualified examiner using robotic equipment with

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zoom capabilities. There were no boric acid deposits noted during this detailed as-found examination. Some minor bridging and blockage of the nozzle annulus was observed, such as, residual spray-lat coating, tape, and insulation. The nozzles are assembled with a slip fit and the bridging/blockage did not restrict the visual examination.

APS and contract employees proceeded to clean the spray-lat coating and foreign material from the nozzle annulus area using a second robot equipped with an elevating cleaning nozzle that sprayed a dry ice media. This method provided a clean zone of approximately one half-inch on either side of the nozzle annulus.

A bare-metal zone was achieved on 39 of the 61 nozzles before implementation problems developed. Due to the size of the cleaning robot, this robot could not reach the lowest nozzles (center) and because of balance and stability issues, this robot could not clean the tallest nozzles (peripheral). This "first-of-a-kind" cleaning system was specifically developed for PVNGS BMI nozzles. APS plans to continue to modify this tooling to achieve cleaning of all 61 nozzles. A bare-metal base line visual examination was performed and documented for the 39 cleaned nozzles.

APS plans on performing a follow-up bare-metal visual examination of the 39 clean nozzles and a follow-up as-found visual examination of the 22 remaining nozzles during the Unit 2 12<sup>th</sup> refueling outage in the spring of 2005. Cleaning of the remaining 22 nozzles will recommence during the Unit 2 12<sup>th</sup> refueling outage in the spring of 2005.

Based on the current visual examination, APS concludes that PVNGS Unit 2 meets applicable regulatory requirements related to the structural and leakage integrity of the reactor pressure vessel lower head penetrations.

This same examination and cleaning method is expected to be employed during the upcoming Unit 1 and Unit 3 refueling outages in 2004.

No commitments are being made to the NRC in this letter. Should you have any questions, please contact Thomas N. Weber at (623) 393-5764.

Sincerely,



CDM/SAB/RJR/kg

Enclosure: Affidavit

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|-----|---------------|---|
| cc: | B. S. Mallett | NRC Region IV Regional Administrator                  |
|     | M. B. Fields  | NRC NRR Project Manager + (send electronic and paper) |
|     | N. L. Salgado | NRC Senior Resident Inspector for PVNGS               |